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**From:** Alvey, Robert [Alvey.Robert@epa.gov]  
**Sent:** 3/24/2016 12:46:30 PM  
**To:** Scharf, Steven (DEC) [steven.scharf@dec.ny.gov]  
**CC:** Wilkie, Henry (DEC) [henry.wilkie@dec.ny.gov]; Swartwout, John (DEC) [john.swartwout@dec.ny.gov]; Evans, Daniel (DEC) [daniel.evans@dec.ny.gov]; Papura, Thomas R (DEC) [thomas.papura@dec.ny.gov]; Eaton, Daniel J (DEC) [daniel.eaton@dec.ny.gov]; Rice, Timothy B (DEC) [timothy.rice@dec.ny.gov]; Stein, Carol [Stein.Carol@epa.gov]; Metz, Chloe [Metz.Chloe@epa.gov]  
**Subject:** RE: Radium 226 and Radium 228

Steve and Henry, Next time I see you I owe you both a cup of coffee. Don't want to make MORE work for you or me, (especially since I'm limited to primarily NPL Superfund site responsibilities.)

Based on my own observations, there have been many places where acids and even oxygenated water has been discharged, sometimes directly by re-injection wells, sometimes to leach pits or "recharge basins". Some treatment systems have to adjust pH in accordance with their permits prior to discharge. The unanticipated consequential issue may be something that the "Water Division" can consider addressing. Perhaps Carol Stein can bring that up.

Will give some thought.

Regards  
Rob

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**From:** Scharf, Steven (DEC) [mailto:steven.scharf@dec.ny.gov]  
**Sent:** Thursday, March 24, 2016 8:33 AM  
**To:** Alvey, Robert <Alvey.Robert@epa.gov>  
**Cc:** Wilkie, Henry (DEC) <henry.wilkie@dec.ny.gov>; Swartwout, John (DEC) <john.swartwout@dec.ny.gov>; Evans, Daniel (DEC) <daniel.evans@dec.ny.gov>; Papura, Thomas R (DEC) <thomas.papura@dec.ny.gov>; Eaton, Daniel J (DEC) <daniel.eaton@dec.ny.gov>; Rice, Timothy B (DEC) <timothy.rice@dec.ny.gov>; Stein, Carol <Stein.Carol@epa.gov>  
**Subject:** RE: Radium 226 and Radium 228

Rob, Please see responses below. Steve

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**From:** Alvey, Robert [mailto:Alvey.Robert@epa.gov]  
**Sent:** Wednesday, March 23, 2016 3:31 PM  
**To:** Wilkie, Henry (DEC)  
**Cc:** Scharf, Steven (DEC)  
**Subject:** Radium 226 and Radium 228

Hi Henry and Steve,

Rob: Interesting to see the new sampling planned. You are certainly working hard....and better you than me (LOL)  
Steve: Thanks for the kudos. We don't usually get any of that on this project so we'll take what we can get and we're trying at the same time to stay ahead of the curve.

Rob: I have a minor question and perhaps you might have time to look over a separate memo I've been putting together regarding radium in groundwaters of LI. The readings I've done seem to indicate that concentrations can build up in association with pH, DO and other changes to basic GW chemistry.

Steve: Both Grumman and the Navy do have the pH and conductivity of the purge water, and I do believe dissolved oxygen as well. We can ask them for this information. We do know that acids were once disposed directly into the leach pits behind former Plant 1. Coincidentally, this is where GM 15 S is located with the highest total 226/228 concentrations with the uncertainty exceeding the 5 pico curies per liter.

Rob: When low flow sampling is done, pH and DO are indicators regarding purging, but at EPA we don't normally add them to a database. Do you think it might be worth time to see if the indicators are precise enough with the field instrumentation to bother adding them to a locational database?

Steve: I believe these parameters are taken somewhat qualitatively where the field team is looking for stabilization. But it would be worth a look/see as to what the parameters of GM 15 S vs other wells are.

Rob: I'm still trying to find out if I can find anyone to do basic mineralogical analysis to get more representative analysis on Mn in the sediment formations at various places. In retrospect, I wish I'd been able to convince everyone to simply include every well and all "constituents" back in 2013 when the "comprehensive" sampling was discussed.

Steve: I will talk to Dan Eaton to see if it's feasible to put the parameters into the EQUIS database.

Have a great day.

Steve

Steven M. Scharf, P.E.  
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Regards  
Rob Alvey

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**From:** Wilkie, Henry (DEC) [<mailto:henry.wilkie@dec.ny.gov>]

**Sent:** Wednesday, March 23, 2016 1:04 PM

**To:** [mikebwd@optonline.net](mailto:mikebwd@optonline.net)

**Cc:** Harrington, Jim (DEC) <[jim.harrington@dec.ny.gov](mailto:jim.harrington@dec.ny.gov)>; Schick, Robert (DEC) <[robert.schick@dec.ny.gov](mailto:robert.schick@dec.ny.gov)>; Evans, Daniel (DEC) <[daniel.evans@dec.ny.gov](mailto:daniel.evans@dec.ny.gov)>; Scharf, Steven (DEC) <[steven.scharf@dec.ny.gov](mailto:steven.scharf@dec.ny.gov)>; Swartwout, John (DEC) <[john.swartwout@dec.ny.gov](mailto:john.swartwout@dec.ny.gov)>; Parish, Walter (DEC) <[walter.parish@dec.ny.gov](mailto:walter.parish@dec.ny.gov)>; Fly, Lora B CIV NAVFAC MidLant Environmental <[lora.fly@navy.mil](mailto:lora.fly@navy.mil)>; Hannon, ED (AS) <[Edward.Hannon@ngc.com](mailto:Edward.Hannon@ngc.com)>; Garbarini, Doug <[Garbarini.Doug@epa.gov](mailto:Garbarini.Doug@epa.gov)>; Stein, Carol <[Stein.Carol@epa.gov](mailto:Stein.Carol@epa.gov)>; Alvey, Robert <[Alvey.Robert@epa.gov](mailto:Alvey.Robert@epa.gov)>; DeFranco, Joseph (NASSAU) <[jdefranco@nassaucountyny.gov](mailto:jdefranco@nassaucountyny.gov)>

**Subject:** 2nd Phase proposed well to be sampled for Radium 226 and Radium 228

Good Afternoon Mr. Boufis:

This e-mail is a follow up to your conference call with Governor Andrew Cuomo and DEC Acting Commissioner Basil Seggos on the afternoon of March 22, 2016.

DEC has assembled the list of proposed wells found in the attached draft work plan. DER has been instructed to expedite this work plan so it can be implemented as soon as possible. It is my understanding that you are currently reviewing the data from our previous radium groundwater

sampling collected in 2015, in order to select wells that Bethpage Water District will recommend for this upcoming round of radium groundwater sampling.

Please submit your input as soon as possible. So we may proceed with the schedule of this radium groundwater sampling event.

If you have any questions, please contact either Steve Scharf (518)402-9620 or myself.

Thanks,

*Henry Wilkie*

**Henry Wilkie**

Environmental Engineer I, Division of Environmental Remediation

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